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ABSTRACT

In order to help explain language variation and promote an understanding of spatial networks and diffusion patterns, data from the records of the Survey of English Dialects (SED) are analyzed with respect to geolinguistics. The data include all recorded instances of words with morpheme-final consonant clusters for all 75 interviews with older adult males made by the SED on the Isle of Man and in six northern countries of England. A variable rule for interpreting the data is analyzed, with a distinction drawn between the most restricted (or least general) version of the rule and the less restricted (or more general) versions. As these refinements of the linguistic analysis are mapped onto a spatial representation, a geographic correlate of the phonological analysis emerges: speakers with the more restricted versions of the rule tend to cluster together in areas which are bounded by the areas in which speakers with the more general versions of the rule are located. Attention is directed to the tendency to simplify morpheme-final consonant clusters in words (e.g., fist, post, bind, and thousand) so that they sometimes occur in speech as (fis', pos', bin', and thousan'). All speakers exhibited a tendency to simplify the final clusters. The phonological rule that underlies the linguistic behavior is examined. (SW)

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DISCUSSION PAPERS in GEOLINGUISTICS 5

GEOLINGUISTICS OF A VARIABLE RULE

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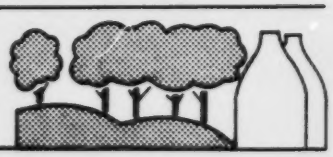

GEOLINGUISTICS OF A VARIABLE RULE

J.K. CHAMBERS

Professor J.K. Chambers teaches in the Department of Linguistic Studies, University of Toronto. He has recently completed a text on Dialectology which expands on some of the themes raised in this paper.

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Dialect geography, when it has been noticed at all in recent years, has usually been dismissed as an uninteresting subfield of linguistics. The reason for this, obviously, is its lack of involvement in the theoretical developments of modern linguistics, developments in which dialectologists have most often been passive, and even disinterested, bystanders. Labov's comment on this matter states the current status of dialect geography as well as any; he says, "In the 20th century, dialectology as a discipline seems to have lost any orientation towards theoretical linguistics, and dialect geographers have generally been content to collect their materials and publish them" (1972: 268). The main thrust of dialect geography has been antiquarianistic.

However, recent developments, both within linguistics and outside of it, suggest that the time is ripe for renewing attempts at studying the geographical dispersions of linguistic elements. Chief among these, of course, is the study of urban dialects, which in the past fifteen years or so has grown and developed from a very minor research area into one of the dominant currents of the linguistic mainstream. Parallel to the study of urban dialects, and concomitant with it in its original impetus, has been the development of variation theory, the set of hypotheses and premises which results from accepting the variable as a structural unit in the grammatical model. A third development, virtually unnoticed by linguistics so far, has taken place in the field of human geography, which increasingly recognizes social attitude and community networks in its attempts to build dynamic models of diffusion. (All three of these developments and their relevance to a modern dialectology are discussed at length in Chambers & Trudgill, 1980.) Developments like these greatly enhance the prospects for a vital and theoretically salient subfield called geolinguistics.

These developments also serve to emphasize the naivety of linguists who, when faced with what they see as the failure of dialect geography, have concluded that a subfield of geolinguistics is simply unmanageable or impossible. Thus Bailey, for example. asserts: "Geographical dispersions can be so chaotic as to challenge the plausibility of any hypotheses about the orderliness of language variation" (1973: 86). Even prima facie, it is simply inconceivable that language, as a human property, would not reflect the spatial relationships which bring human beings together and keep them apart. True, the reflection of language in geography may not be as simple as Bailey and others apparently expected, but that is surely no reason dismiss it altogether. What is required is a richer set of hypotheses about language variation and a more profound understanding of spatial networks and diffusion patterns. We are already in a position where we can make a start.

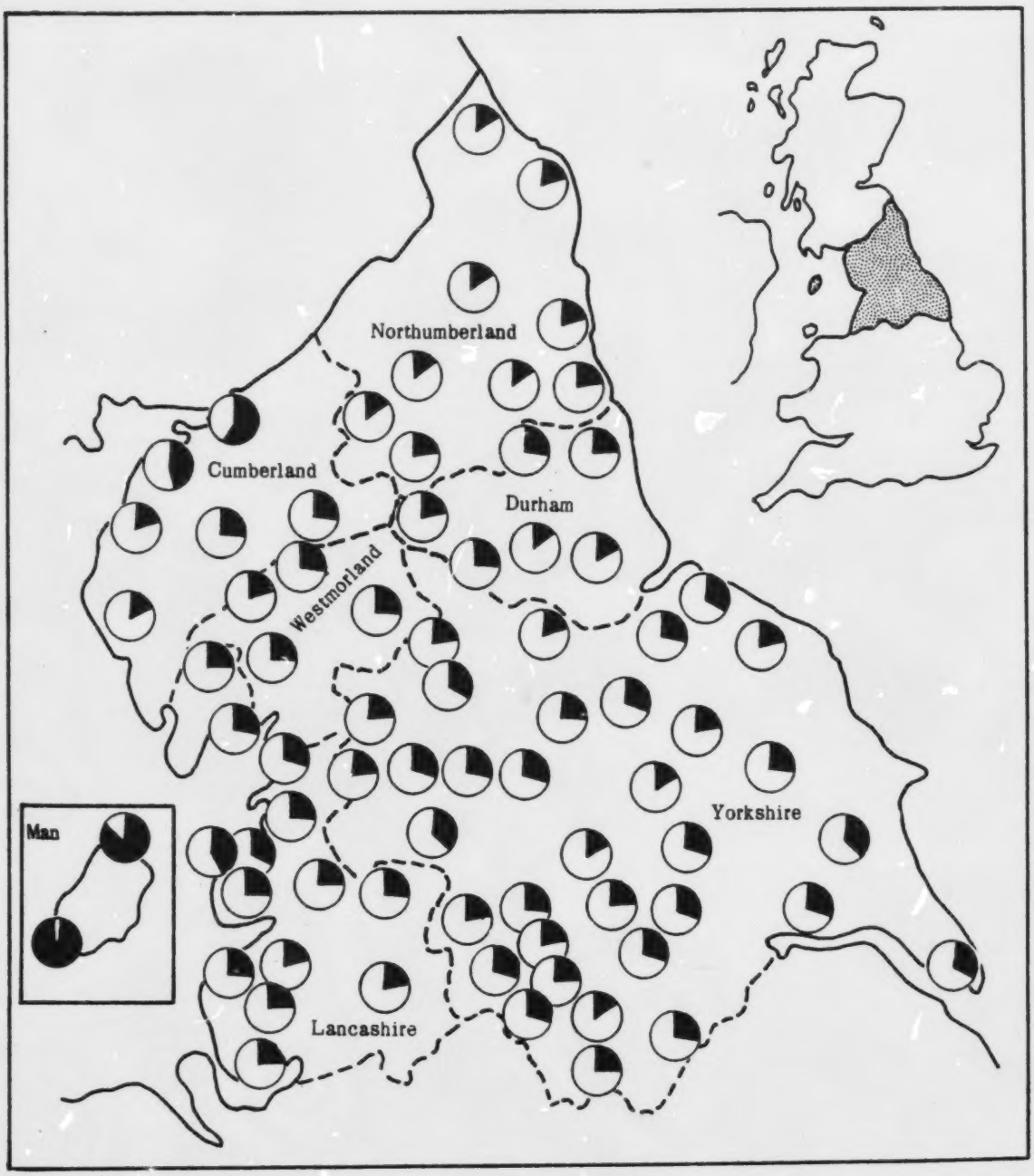
What follows is a case study towards that goal. In §1, I set out some apparently intractable data culled from the records of the Survey of English Dialects (SED). The data include all recorded instances of words with morpheme-final consonant clusters for all 75 interviews made by the SED on the Isle of Man and in the six northern counties of Northumberland, Cumberland, Durham, Westmorland, Lancashire and Yorkshire. The survey population, typical of most survey populations in traditional dialectology, belongs to the social class known acronymically as NORMs, mainly non-mobile, older, rural males (Chambers & Trudgill, 1980: Chap. 2). In section 2, I discuss the variable rule which accounts for the occurrence of data of the type shown in §1, and begin the analysis of the data. In sections 3 and 4, I focus on the versions of the variable rule which occur, dealing first with the most restricted (or least general) rule, and then moving on to the less restricted (or more general) versions. As these refinements of the linguistic analysis are mapped onto a spatial

representation, a geographic correlate of the phonological analysis emerges: speakers with the more restricted versions of the rule tend to cluster together in areas which are bounded by the areas in which speakers with the more general versions of the rule are located. In section 5, I attempt to provide an overview of these results.

1. The Data

In all dialects of English, there is a tendency to simplify morpheme-final consonant clusters in workds like fist, post, bind and thousand, so that they sometimes occur in speech as fis', pos', bin' and thousan'. This tendency has now been carefully studied in numerous projects in urban dialectology, and is widely known from the studies of Black English in New York City (summarized in Labov, 1972: esp. 216-23) and in Detroit (summarized in Wolfram & Fasold, 1974: 101-05, 129-34). This same tendency is also the focus of this paper, in the speech of the rural speakers of northern England surveyed by the SED (Orton & Halliday, 1963).

The SED records provide 39 items which have the relevant canonical shape. In the course of the interviews by the SED fieldworkers, none of the 75 informants supplied all 39 of these items-- the most for any one speaker was 36, the fewest was 25, and the median was 31 or 32. All speakers, without exception, exhibited a tendency to simplify the final clusters. However, beyond that bare and rather unremarkable fact, there is no obvious generalization to be made about the tendency, as Figure 1 shows. Figure 1 gives a gross indication of the variability of final cluster simplification in northern England: each piegraph represents one speaker, and the darkened slice of the piegraph shows the percentage of simplification for each speaker, a figure arrived at simply by dividing the number of items with simplified clusters by the total number of items and multiplying by 100. A fairly careful inspection of Map 1 is required



MAP 1--Cluster simplification in the six northern counties of England and the Isle of Man. Each piegraph represents one speaker, with the blackened slice showing the percentage of deletions. (Inset in the upper right is Britain; the stippled area marks the six northern counties and the Isle of Man.)

to discover that the lowest percentage shows up for a speaker in Northumberland (SED record Nb8), where the piegraph represents 15%. The highest percentage, 98% occurs for one of the Isle of Man informants (Man2), and the next highest is the other Man informant, at 86%. Apart from observations such as these, Map 1 proves altogether unrevealing. There is, for example, no observable tendency for similar percentages to cluster significantly, and no generalization about tendencies in the data is apparent. In fact, the situation looks like a perfect example of Bailey's 'chaotic geographical dispersion'.

My point from here on, however, is to show that it is not the linguistic situation which is chaotic but the linguistic analysis which yields the display shown on Figure 1. By merely opposing the simplified clusters to the preserved ones in the corpus, the quantification rests on an assumption that each token in the corpus of items has equivalent linguistic status. That assumption turns out to be false. To see that, we must look more closely as the linguistic object--the phonological rule--that underlies the linguistic behaviour represented so grossly on Map 1.

2. The variable (CC)

All dialects of English show some tendency to simplify morpheme-final consonant clusters by deleting the final consonant. In standard dialects, the effect of such simplification is not particularly noticeable because it is highly constrained. Typically, it happens frequently only in the more casual styles of speech, and then, usually, only when the final cluster is followed by a morpheme beginning with a consonant. Thus, one is likely to hear a pronunciation like, say, han'ful alternating with handful, or las'night alternating with last night.

In man vernacular dialects, the tendency is much more frequent, and consequently more noticeable, because it is less tightly constrained. Cluster simplification occurs in more careful styles as well as the casual

styles, and in phonetic environments besides those with a following consonant. One might hear it when a vowel follows, as in, say, poun' of butter, which alternates with pound of butter; or in utterance-final position, preceding a pause, as in fis' and bin', which alternate with fist and bind.

This situation is linguistically interesting for several reasons. The occurrence of alternating forms like hand and han'ful provides an arguement for underlying forms which have the consonant clusters intact, and for a phonological rule which deletes the final consonant of the cluster in certain circumstances. The fact that the cluster is sometimes intact and sometimes simplified shows that the phonological rule is variable rather than categorical, that is, it does not apply to every form which meets its structural description. Moreover, the careful studies of this variable, hereafter symbolized (CC), in New York City (Labov, Cohen, Robins & Lewis, 1968) and Detroit (Wolfram, 1969) have shown that the rule is sociologically interesting as well, in the sense that the variability of its application has both social determinants and linguistic determinants. That is, the frequency of the deletion increases if the speakers are placed on a social scale from middle class (MC) to working class (WC), and also if the tokens are categorised linguistically in terms of a following vowel (CC#V) or a following consonant (CC#C). The following matrix, from Labov's study (1972: 222), illustrates the sociolinguistic variation:

			CC#C	CC#V	
Social Classes	New York	MC	60%	28%	Simplified final clusters
		UWC	90	40	
		LWC	89	40	
	Detroit	UMC	79	23	
		LMC	87	43	
		UWC	94	65	
		LWC	97	72	

The matrix clearly establishes the social correlates of the rule, showing that the frequency of cluster simplification is greater for groups lower on the social scale than for the higher classes. It also establishes the linguistic constraint of the following environment, showing that, for all classes in both cities, deletion is more likely when a consonant follows than when a vowel follows. Even this set of correlations can be refined further, for Wolfram, in his Detroit study, showed the significance of the preceding consonant in the cluster as a conditioning factor. When the first C in the cluster CC is a sonorant, the frequency of the deletion of C is greater than when it is an obstruent. This further correlation is illustrated in the following grid (Wolfram & Fasold, 1974: 102):

	SonC#C	ObsC#	SonC#V	ObsC#V
Detroit	83.3	68.8	34.9	25.2

Whether the cluster precedes a consonant or a vowel, the results for Detroit show that cluster simplification is more frequent if the first consonant is a sonorant.

The studies of cluster simplification in New York and Detroit offer valuable clues for the analysis of cluster simplification in northern England. Obviously, since the northern England study deals only with one social class, NORMs, there is no possiblity for partitioning the corpus according to social classes. However, it must be partitioning according to possible conditioning factors. In addition to the environments CC#C and CC#V, there is a third possibility in our data. Because the SED records were compiled be eliciting responses to questions, most of the data occur as citation forms rather than tokens in connected discourse. As a result, many of the relevant responses

occur before a pause, that is, in utterance-final position. This context will be symbolized as CC##. Most of the available tokens belong to this category. The number of examples before a consonant (CC#C) is sufficient, but the number of examples before a vowel (CC#V) is unfortunately too small to give much confidence, although they will be included wherever possible. Given the limits of the available corpus, there is no possibility of further partitioning these CC#C and CC#V examples to deal with the preceding consonants, because there are too few items to make up a meaningful sub-subclass. However, the CC## examples are numerous enough, and will be separated into SonC## and ObsC## according to whether the preceding consonant is a sonorant or an obstruent, respectively. Thus categorized, the list of items in the corpus is as follows:

1. CC#C

   friends, grindstone, half past seven, handful, hands, last night, pound note, posts, shafts, windpipe

2. CC#V

   grindingstone, lend us, pound of tea

3. SonC##

   (belly)band, bind, blind, ground, hand, pond, pound, rind, round, second, thousand, twelve

4. ObsC##

   breakfast, breast, dust, first, fist, harvest, last, loft, post, (occurs twice in SED records), sawdust, shaft, wrist, yeast .

Working with a fixed and relatively small corpus like this one brings its own problems, of course, especially with respect to the confidence one can place in the generalizations which emerge from its analysis. It is not as critical a factor as it might be, however, because it is mitigated by two other factors. First, the studies in New York City and

Detroit (and elsewhere) serve as a kind of check against the conclusions that these data lead to, and, secondly, the cumulative analysis of this corpus for all 75 speakers in the SED survey of northern England yields a kind of community norm against which any one speaker's responses may be checked. To see this, consider the analysis of the CC#V items, for which the limits of the corpus are most acute. Since there are only three such items at most, any comparison between this class and the others seems especially risky. In fact, the situation is even worse than it might appear to be at first, since these items are among the least likely to occur in an informant's responses: only one speaker in the group of 75 offers all three items, less than half of the speakers offer two of them, and the rest give just one (ie., no one gives none at all). Yet in comparing the percentage of deletions in this class with the percentage in the CC#C class, it turns out that only one speaker has a higher score for deletions of CC#V than for CC#C. That one, a NORM from the Isle of Man, shows 100% for CC#V (one of one) compared to 86% for CC#C (six of seven). As a result, we can discount the quantifications for this one speaker, blaming the skewing on the limits of the corpus, because this speaker is jarringly at odds with the rest of the sample at this point, and because he runs counter to one of the most firmly established conclusions of the Black English studies, which show that CC#C is always a more likely environment for cluster simplification than CC#V is. By using reasonable caution in drawing generalizations out of the analysis, it is possible to use the available data for determining the geolinguistic patterns.

3. Deletion before consonants and vowels

With the data rearranged according to possible conditioning factors, certain trends in cluster simplification in northern England emerge. Perhaps most noticeable is the fact that CC#C is not only the most likely

environment for deletion but is also in some cases the only environment where deletion is possible. This is hardly surprising, because it is well known that some dialects, including many standard ones, have deletion in this environment only. One possibility is that some of the lects we are considering may have a categorical deletion rule here, as follows:

(R1) $C \longrightarrow \emptyset \ / \ C __ \# \ C$

In fact, the data for three of the speakers in the sample might be described using a rule like (R1), because they show 100% deletion in this context and none at all in any other. However, it seems more reasonable, under the circumstances, to group these three speakers with the other thirteen who also have cluster simplification only before a following consonant, although it is less than 100% here. In other words, the phonological rule cannot be categorical but must be variable in order to describe these data. For all of these speakers, we need a variable rule version of (R1), shown as (R2):

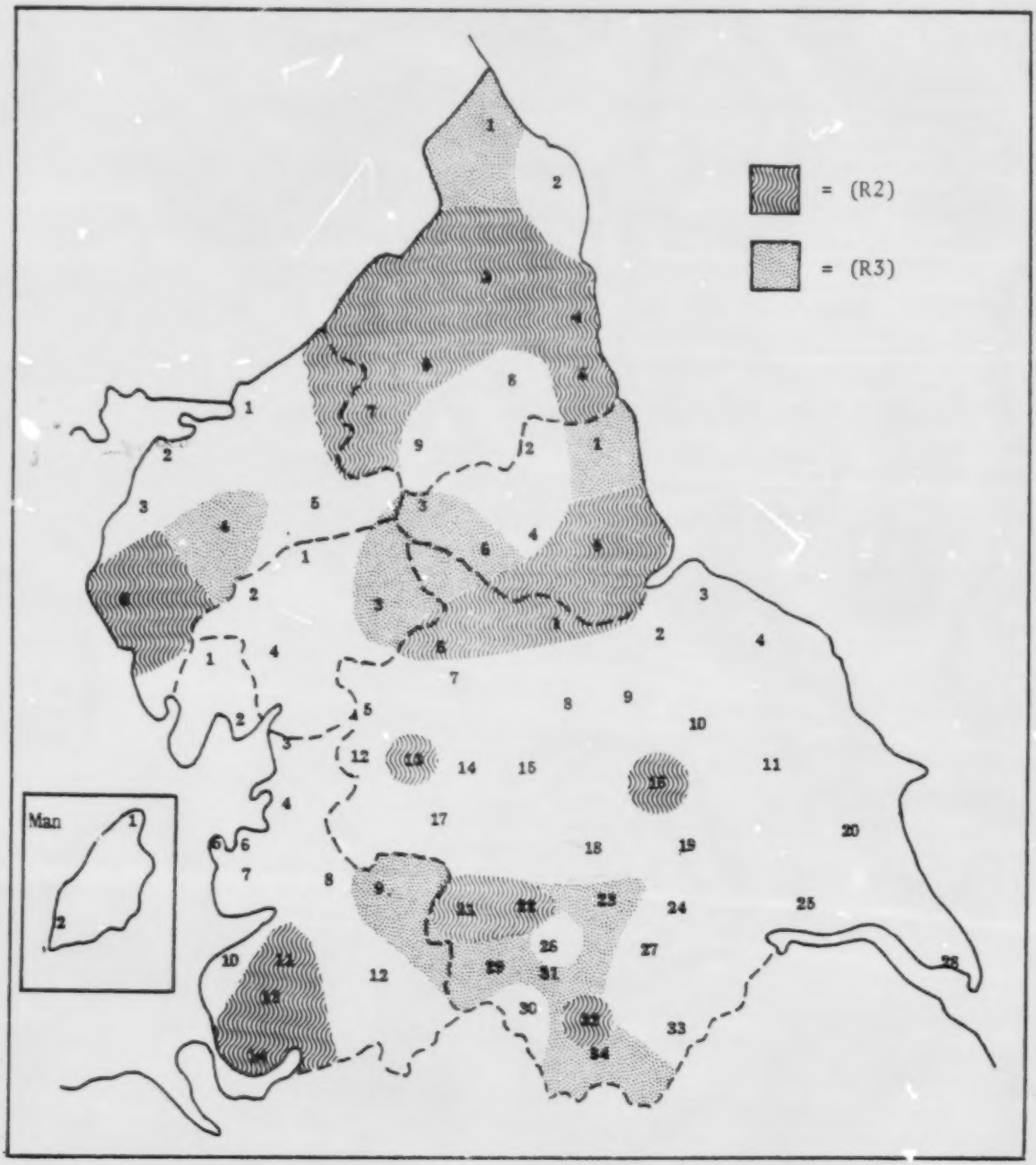
(R2) $C \longrightarrow (\emptyset) \ / \ C __ \# \ C$

For certain other speakers in the sample, cluster simplification occurs in the environment CC#V as well as CC#C, but nowhere else (ie., never in utterance-final position). The variable rule which describes these data is more complicated:

(R3) $C \longrightarrow (\emptyset) \ / \ C __ \# \ ^{a}C, \ ^{b}V \qquad$ (where a > b)

The superscripts a and b on the right context of (R3) specify the relative rank of the two environments (a > b). In the study in which the corpus was not strictly limited, a and b could be stated as probabilities governing the rule application; here, we will have to settle for a notation which expresses the relative strength of the two contexts.

An inspection of (R2) and (R3) shows that they are formally related in the sense that (R2) is properly included in (R3). That is, (R3), the more general rule, subsumes (R2), the less general one. Figure 2 shows that this linguistic property has a geographical correlate: the lects



MAP 2--The geographical dispersion of (R2) is included in the range of (R3), wherever both rules occur. Isolated lects always have the less general rule.

with the less general rule are located within the area of the more general rule. (Y13 and Y16 are exceptions, since they are not included in either area where the more general rule occurs; they will be considered again in the final section.) This geographical correlate seems altogether natural if one considers that the linguistic situation which it reflects involves rule generalization. Presumably, rule (R2) is the older rule and rule (R3) represents the extension of cluster simplification into a new environment. It follows that the range of speakers with (R2) and (R3) will be contiguous, since one develops from the other. And it is certainly not surprising to find that speakers with one rule or the other tend to cluster, since innovation waves tend to touch the proximate before the remote. However, the fact that (R3) has a wider range than (R2) is perhaps surprising; I know of no principle that might lead to that expectation. As we shall see below, it is a pattern that recurs.

4. Deletion after sonorants and obstruents

Turning now to the other two environments, SonC## and ObsC##, note that the same implicational relationship holds for these as for the first two environments, in the sense that deletion in the environment ObsC## implies deletion in the environment SonC## but not vice versa. For the thirty-two speakers for whom the data show deletion in the latter environment but none at all in the former, I assume a variable rule as follows:

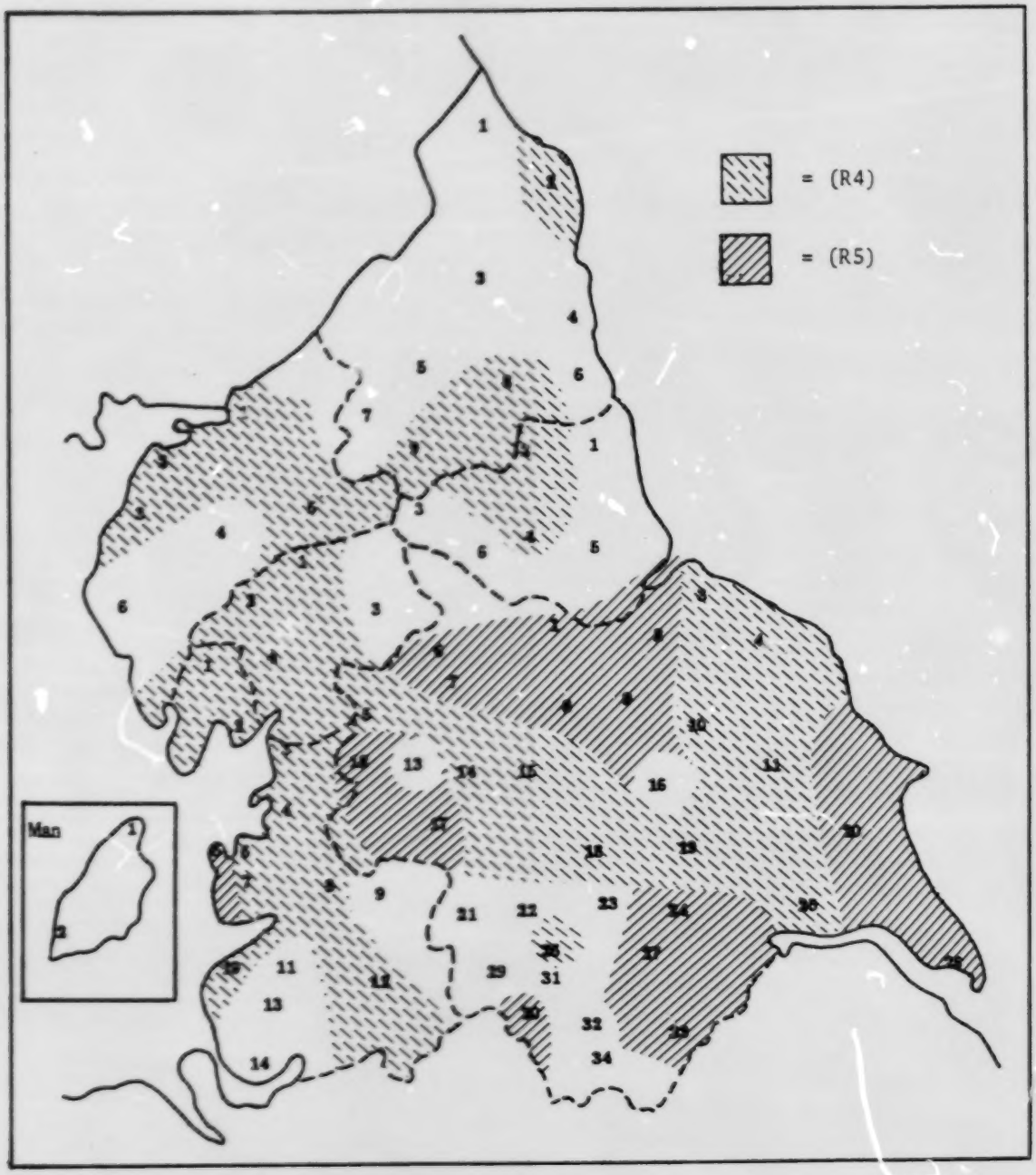
(R4) $C \rightarrow (\emptyset) \;/\; Son ___ \#\#$

For the thirteen remaining speakers who have deletion after an obstruent as well as after a sonorant (not counting the two speakers from the Isle of Man, who are dealt with separately in the next section), the rule is:

(R5) $C \rightarrow (\emptyset) \;/\; {}^{c}Son, {}^{d}Obs ___ \#\#$ (where $c > d$)

As in (R3), the superscripts here indicate the relative rank of the two contexts.

Here again, the two rules are formally related, ie., (R4) is properly included in (R5). Figure 3 shows the relationship between the two geographically



MAP 3--The geographical dispersion of (R4) is included in the range of the more general rule (R5), except in the northern region where (R5) does not occur at all.

and the same pattern emerges: the main area of the lects with (R4) is included within the area where (R5) occurs. Again, there are a couple of speakers outside the main area, for whom the correlation between linguistic inclusion and geographic range does not hold. That is, Nb2 and Cu 1, 2 and 3, who all have the less general rule (R4), are outside of the area where the speakers with the more general rule (R5) are located. This situation is parallel to the one shown in Map 2, where the two sites outside of the geographic range where the more general rule (R3) is found are also isolated occurrences of the less general rule. However, in spite of this similarity, the isolates in Map 3 will turn out to be more integral in the composite geographic pattern than the isolates in Map 2, as will be seen in the next section.

5. The composite pattern

So far, I have discussed the four phonological rules for cluster simplification in northern England in pairs, with the members paired up formally according to the implicational relationship that holds between them. Specifically, any lect that deletes consonants before a following vowel (R3) also deletes them before a following consonant (R2), or, in other words, (R3)⊃(R2). And any lect that deletes consonants after an obstruent (R5) also deletes them after a sonorant (R4), that is, (R5) ⊃(R4).

There is, however, still another implicational relationship that holds among these rules. Any lect which deletes consonants before a pause, whether by (R4) or (R5), also deletes them before a consonant. In other words, any lect with (R4) or (R5) also has (R2), or, using the notation for the other symbolizations (and taking into account the relationship already known to hold between (R4) and (R5), (R5)⊃(R4)⊃ (R2)).

This implicational statement now includes all of the rules except (R3). To determine where (R3) stands among the other rules, one must

determine the rank order of a following vowel and a following pause as conditions for consonant deletion. As mentioned earlier, the data are inadequate for this purpose, because there are only one or two items available in the environment of a following vowel and the quantification is likely to be misleading. Moreover, the studies of final cluster simplification in New York and Detroit are not helpful in determining the rank order in this instance, because the environment before a pause outweights the environment before a vowel in New York but in Detroit they are ranked in the opposite order. The quantification of the data for northern England suggests that the more likely ranking there is the one found in Detroit, namely, the environment with a following vowel outweighing the environment before a pause, and in the absence of any more conclusive evidence, I will assume it to be correct. Now the implicational relationship among all four of the rules can be stated as (R5)⊃(R4)⊃(R3)⊃(R2).

It is also possible to state the four rules in a composite rule schema, in the same way that the pairs of rules were stated in a single schema in the previous sections. In the single rule formulation, each particular rule (R2)-(R5) will be subsumed as a subpart. The frequency figures for each of the variable constraints on the rule will again be represented by a, b, c and d, and the subparts will be determined by a condition on the composite rule which specifies the frequency either as zilch (0) or by the value a-d. The composite rule, which has the status of a diasystemic rule, is stated as follows:

(R6) $C \rightarrow (\emptyset) \; / \; {}^{c}\text{Son}, \; {}^{d}\text{Obs} \; __ \; \# \; {}^{a}C, \; {}^{b}V$

In order to derive the specific rules (R2)-(R5) from (R6), a frequency value must be associated with each of the variable constraints listed in the environment of (R6). The values (recalling that a>b>c>d) are given in the following table:

	hierarchy of contexts			
	__C	__V	Son__	Obs__
(R2)	a	0	0	0
(R3)	a	b	0	0
(R4)	a	b	c	0
(R5)	a	b	c	d

For a speaker whose phonology includes (R2), the frequency of simplification of a final cluster before a consonant is a, but the frequency of simplification before a vowel is zilch; for a speaker with (R3), the frequency of simplification before a consonant is a, which is greater than the frequency before a vowel, b, but the frequency is zilch in all other environments; and so on. Thus (R6) sets out a formal relation among all four rules.

A further nuance arises when categorical rules are considered in these terms. Several studies have shown that in the course of time most variable processes undergo an increase in frequency. In other words, there is a natural tendency for variable rules to evolve in the direction of categoricity. This tendency has already been noted in passing for the variable rule in northern England, when it was mentioned (in §3) that for three of the speakers in the survey, a categorical rule of final consonant deletion in the environment before a following consonant was not inconsistent with the data. The rule is stated in conventional notation as (R1), above. Such a rule can also be stated in terms of (R6), by associating a frequency of 1 (= 100%) with the appropriate context, as shown in the table below.

The logical conclusion of the tendency of variable rules to move in the direction of categoricity is the annihilation of the rule itself. Something approximating this ultimate development is evident in the data for the two speakers on the Isle of Man. For both, the tokens are relatively copious in all the relevant environments and the deletions are all but categorical. The following grid summarizes the data for the two speakers.

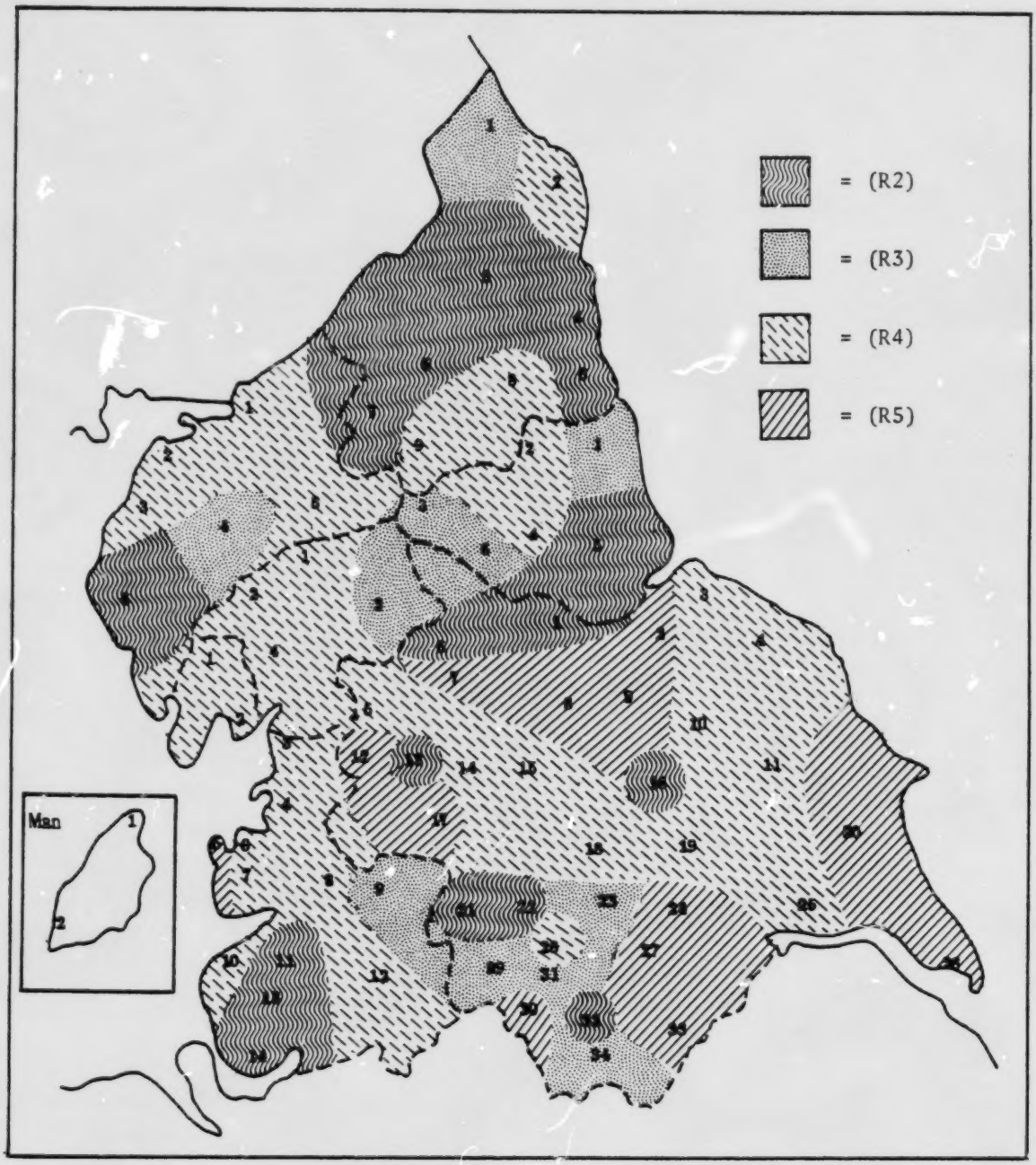
environment	C_#C	C_#V	Son_##	Obs_##	overall
Man1	86	100	79	92	86%
Man2	100	100	100	96	98%

The quantification for Man1 is notably fractious, running against the grain of the hierarchy at both possible points, but even so, the tendency of the deletions to approach the categorical is evident. For Man2, the tendency is more obvious, and the only departure from categorical deletion in the data for Man2 is the single token last, which is recorded alongside las' in the records. The figures for the speakers on the Isle of Man stand out in comparison to all other speakers, both in the frequency of the deletion (the next highest overall percentage is 59% and there is a sharp fall after that, as can be gathered from Map 1), and in the uniformity of deletion across all the categories (the next highest percentage in the environment Obs_##, where the divergence of the Man speakers is greatest, is only 20%).

The contrast between a categorical rule like (R1), which is categorical for one context only, and a categorical rule for Man, where every context is virtually categorical, can be seen in the following table, where a figure of 1 is associated with the appropriate contexts in (R6):

	hierarchy of contexts			
	__C	__V	Son__	Obs__
(R1)	1	0	0	0
(Man)	1	1	1	1

A lect which could be described by (R1) would be characterized by a rigid constraint on cluster simplification, with invariant occurences of forms like han'ful, handout, and hand. On the other hand, a condition like the one shown for (Man) really characterizes an anti-rule. Any lect which might be described by such a rule could not have alternations between, say,



MAP 4--A composite view of the geographical dispersion of (R2)-(R5) in northern England. Apart from two isolated lects in Yorkshire, the lects with the less general rule tend to be bounded by lects with the next most general rule in the set.

fist and fis', bind and bin', last and las'night, or hand and han'ful. Instead, only the second member of each pair could occur, and instead of a rule for final cluster simplification, the data would provide evidence for a lexical reorganization which has simply eliminated morpheme final consonant clusters altogether. Paradoxically, the most advanced form that a variable rule can attain in its evolution is self-annihilating.

Turning now to the geographical dispersion of speakers with the rules (R2)-(R5), we note that the correlation between linguistic and geographic inclusion persists even when the formal complexity of the situation is greater. In Figure 4, the blocs of concentric areas show the (R2) lects as the most internal, surrounded by (R3) lects, which are themselves included in areas of (R4) lects. Where the (R5) lects occur, in the southern section of the map, they surround the (R4) lects. The exceptions are at Y13 and Y16, the two speakers who were first isolated on Figure 2. On Figure 4, they show up as highly conservative speakers, perserving the least general rule in regions where the rule has been generalized by two or three subsequent stages. On the other hand, it is interesting to note that the speakers who stood apart from the others on Figure 3, Nb2 and Cul, 2 and 3, are integrated into the composite pattern, thus belying their apparent similarity to Y13 and Y16. The difference, apparently, is that they are speakers of the more innovative lects rather than the most conservative, and the more innovative lects are less circumscribed in their distribution.

Perhaps the most striking aspect of Figure 4 to someone conversant with traditional dialect geography is the lack of anything which corresponds to an isogloss. No line demarcates some putative dialect from another dialect, or, looked at from another point of view, too many lines do. Instead, what we find is a series of concentric patterns repeated throughout the region, more or less independent of each other. Is Figure 4, then, "so chaotic as to challenge the plausibility of any hypothesis about the orderliness of linguistic variation?" Obviously not. Figure 4 has an internal consistency,

an orderliness, of its own, and if it is not particularly simple, it is because the linguistic reality that it plots is not simple either. Linguistically, the central element is the rule that simplifies clusters when a consonant follows, (R2). That rule occurs in standard speech and in vernaculars virtually wherever English is spoken, and it is avoided (if at all) only in the more formal styles of speech. The difference between standard speech and vernaculars with respect to this rule seems to be that the vernaculars typically extend the rule in specific ways, so that it becomes not only a device for simplifying triconsonantal clusters (ie., the C's in C$\underline{C}$#C) but also a device for simplifying biconsonantal clusters as well (in C$\underline{C}$#V and C$\underline{C}$##). At least, this is what happens in Black English vernaculars and the regional speech of northern English NORMs. The extensions of the rule (R2) are governed by a hierarchy of possible environments, determined apparently by the phonetic structure of English. There is thus a linguistic motivation for the succession from (R2) to (R3) to (R4) to (R5). However, there is also a social motivation for making the innovations. Hence the tendency of lects with one or another of the rules to cluster together in a geographical representation such as Figure 4. For each lect, the direction of the innovation is structural, but the impetus for the innovation is social. Figure 4 reflects these factors by plotting the orderly progression from the most conservative to the most innovative lects as a regional phenomenon.

Until fairly recently, variable rules like (R2)-(R5) were considered to be outside the domain of linguistic theory. Once admitted, however, their utility was quickly recognized in describing the variability which is so commonplace in linguistic behaviour. They are now the focus of considerable research (cf. Kay & McDaniel, 1979, Sankoff & Labov, 1979), and their use in empirical studies reveals them to be intersting theoretical objects, with their own attributes and implications. It should not be surprising to discover that they also have their own geography.

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Geolinguistics of a Variable Rule

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